Cooperative Agricultural Pest Survey

A Program to Detect Plant Pests And Diseases of Regulatory Concern

Bradley A. Danner
State Survey Coordinator
FDACS-DPI-CAPS

Krystal Ashman
CAPS Identifier
FDACS-DPI-CAPS

Pest Survey Specialist
FDACS-DPI-CAPS

Justice Diamond
GIS/Mapping Specialist
FDACS-DPI-CAPS

Robert Leahy
Pest Survey Specialist
USDA-CAPS

Large Pine Weevil
Hylobius abietis

Black Fir Sawyer Beetle
Monochamus urussovii

Japanese Pine Sawyer Beetle
Monochamus alternatus

Common Pine Shoot Beetle
Tomicus destruens

Oak Ambrosia Beetle
Platypus quercivorus

Exotic Wood Boring Beetle Survey

Bark and Ambrosia Beetles (Curculionidae: Scolytinae, Platypodinae), Longhorn Beetles (Cerambycidae), and Jewel Beetles (Buprestidae)

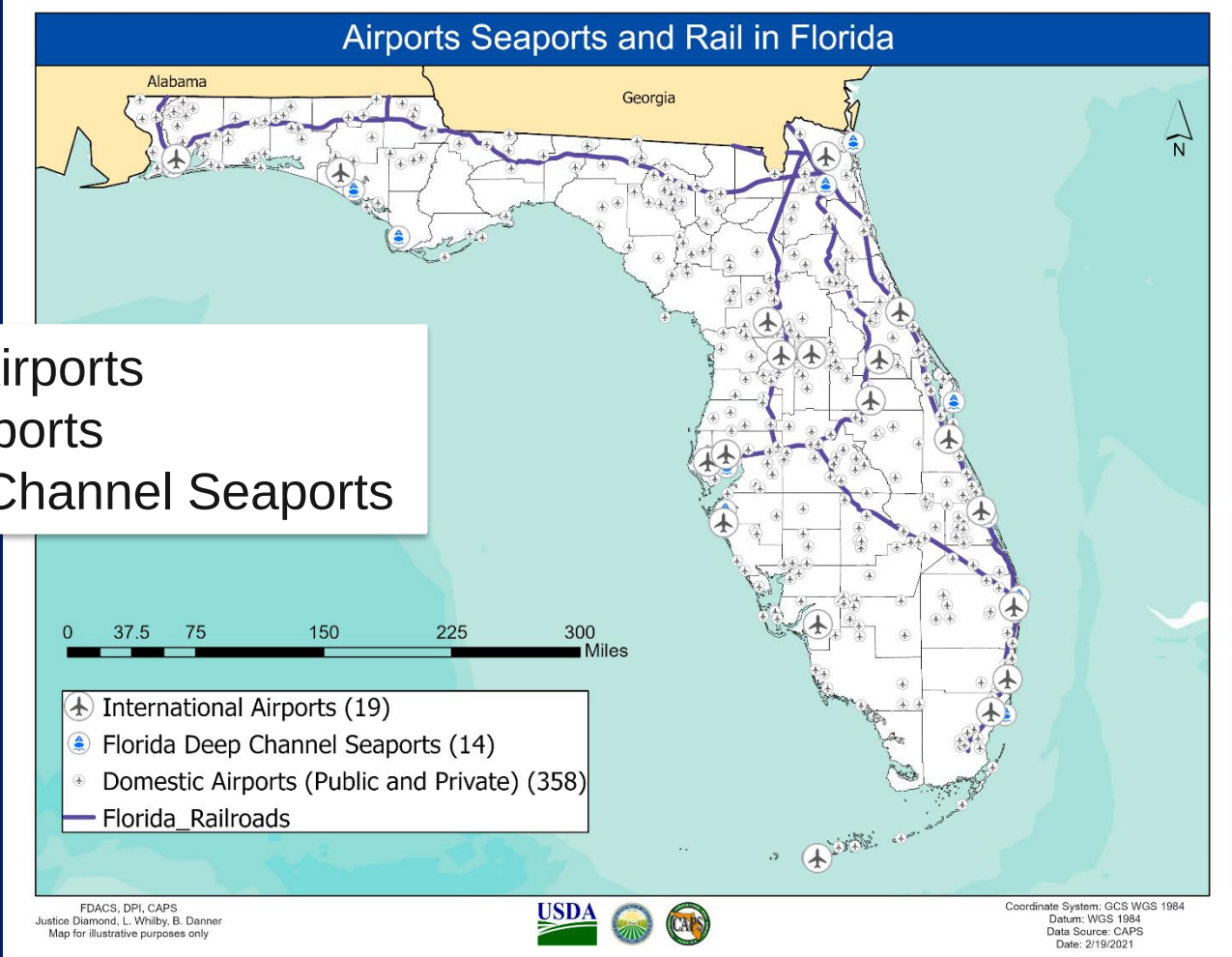
EWBB

- Florida's forest industry: >$16.5 billion, >133,000 jobs
- Plus: tourism, parks, preserves, residential and street trees

Florida is a major trade hub and receives material by rail, sea and air from all over the world, putting it at a high risk for the introduction and establishment of exotic wood boring insects.

EWBB

19 International Airports
358 Domestic Airports
14 Florida Deep Channel Seaports



EWBB

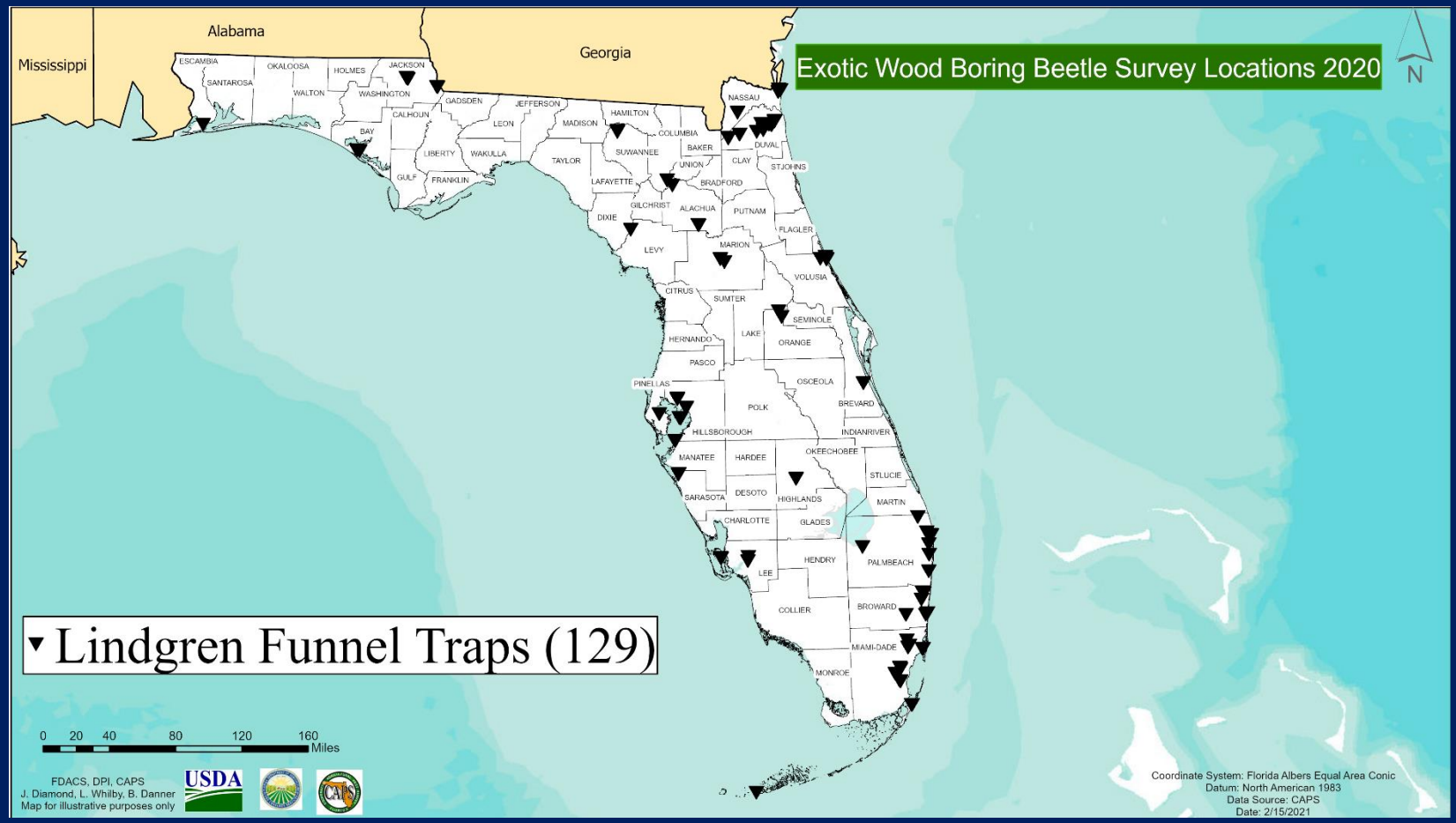
- Survey and monitor high risk areas that pose the greatest likelihood of introduction and establishment of exotic wood boring insects via infested wood packing materials and firewood.
  - Campgrounds
  - Natural areas
  - Green areas around ports
  - Disturbed areas (natural disasters)

EWBB

129 Lindgren multi-funnel traps throughout the state

4 Lure types:

- EtOH
- AP+EtOH
- AP+EtOH+Monochamol
- Quercivorol

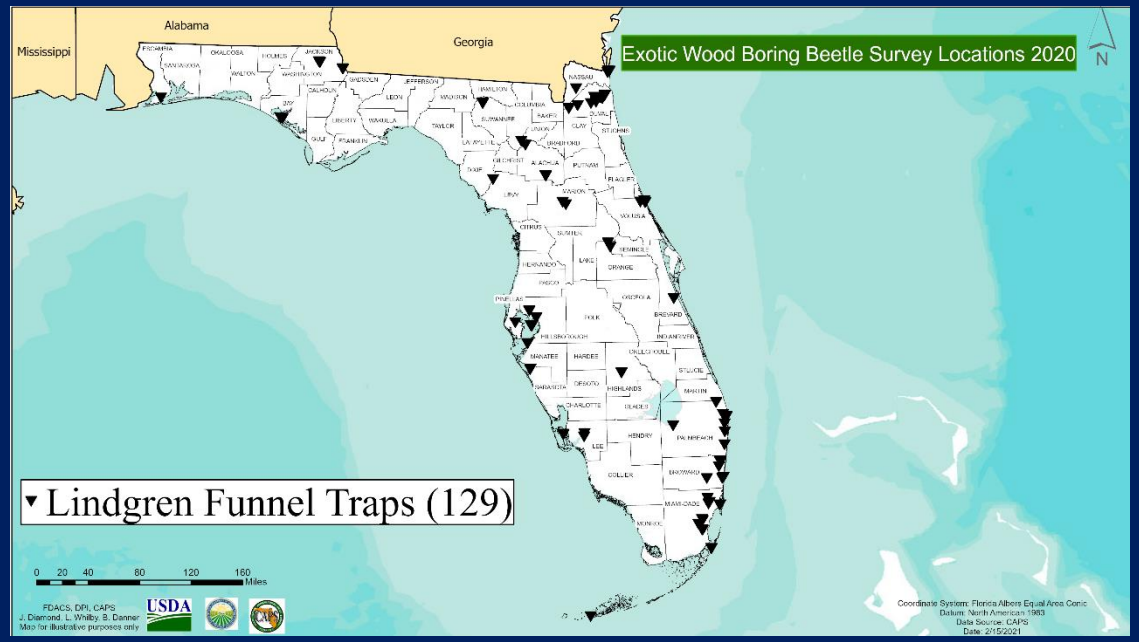


EWBB: 2020 Results

No pests from the CAPS target list have been detected; however:

- 129 traps
- 1,211 samples were processed
  - Gerridae:
    - *Rheumatobates minutus*
  - Curculionidae:
    - *Phaenomerus foveipennis*
    - *Xyleborinus octiesdentatus (2)*
    - *Ambrosiodmus lewisi*
  - Monotomidae:
    - *Thione championi*

County records — 3
State records — 2

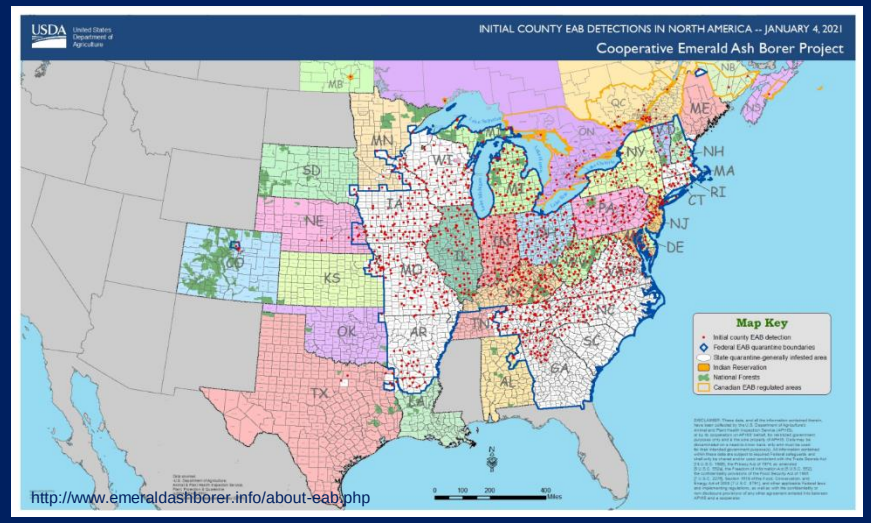


Emerald Ash Borer (EAB)

Agrilus planipennis

EAB

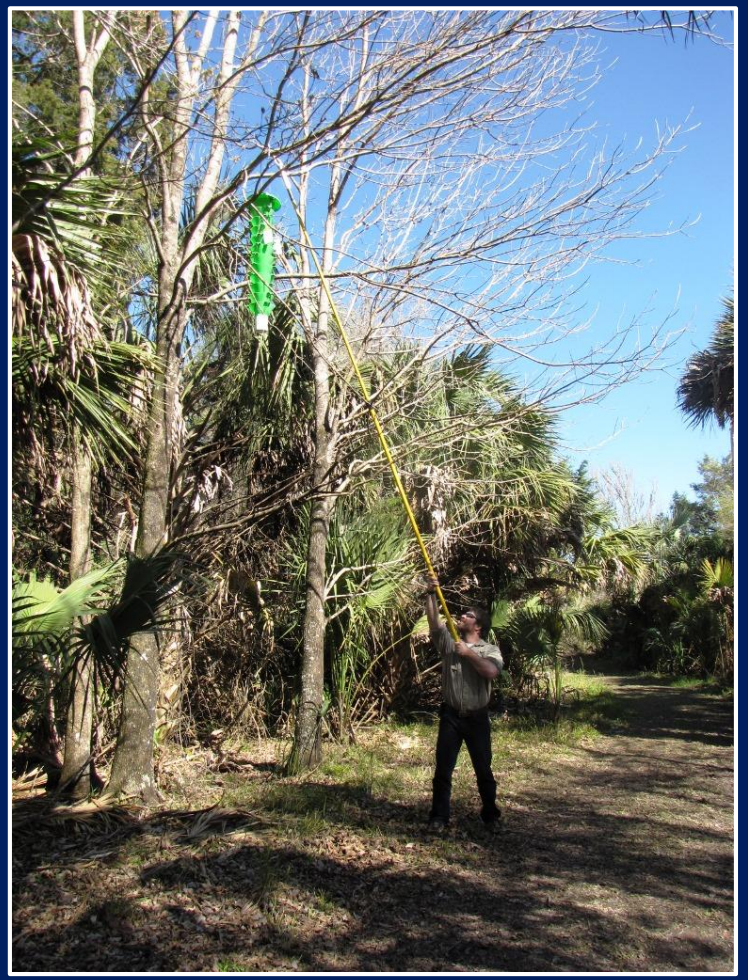
- Arrived from Asia in packing wood material in 1990
- 2002 identified as cause of ash mortality in Michigan and Ontario
- Epicormic growth



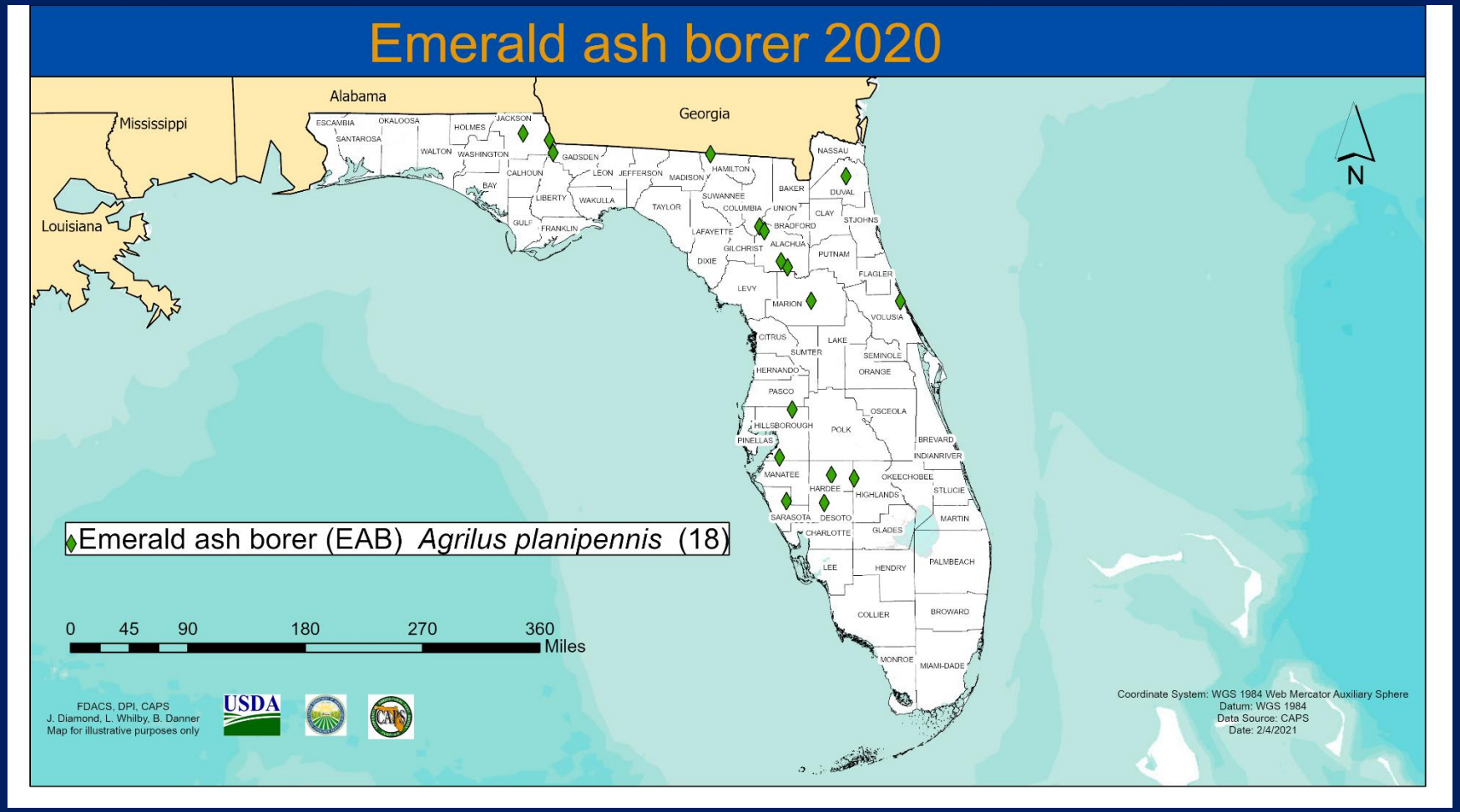
EAB

- Feb - Aug
- State parks, state forests, federal camp sites, private camp sites, highway rest areas
- Green Lindgren funnel traps
- EAB Lure:

  z-3-hexen-1-ol



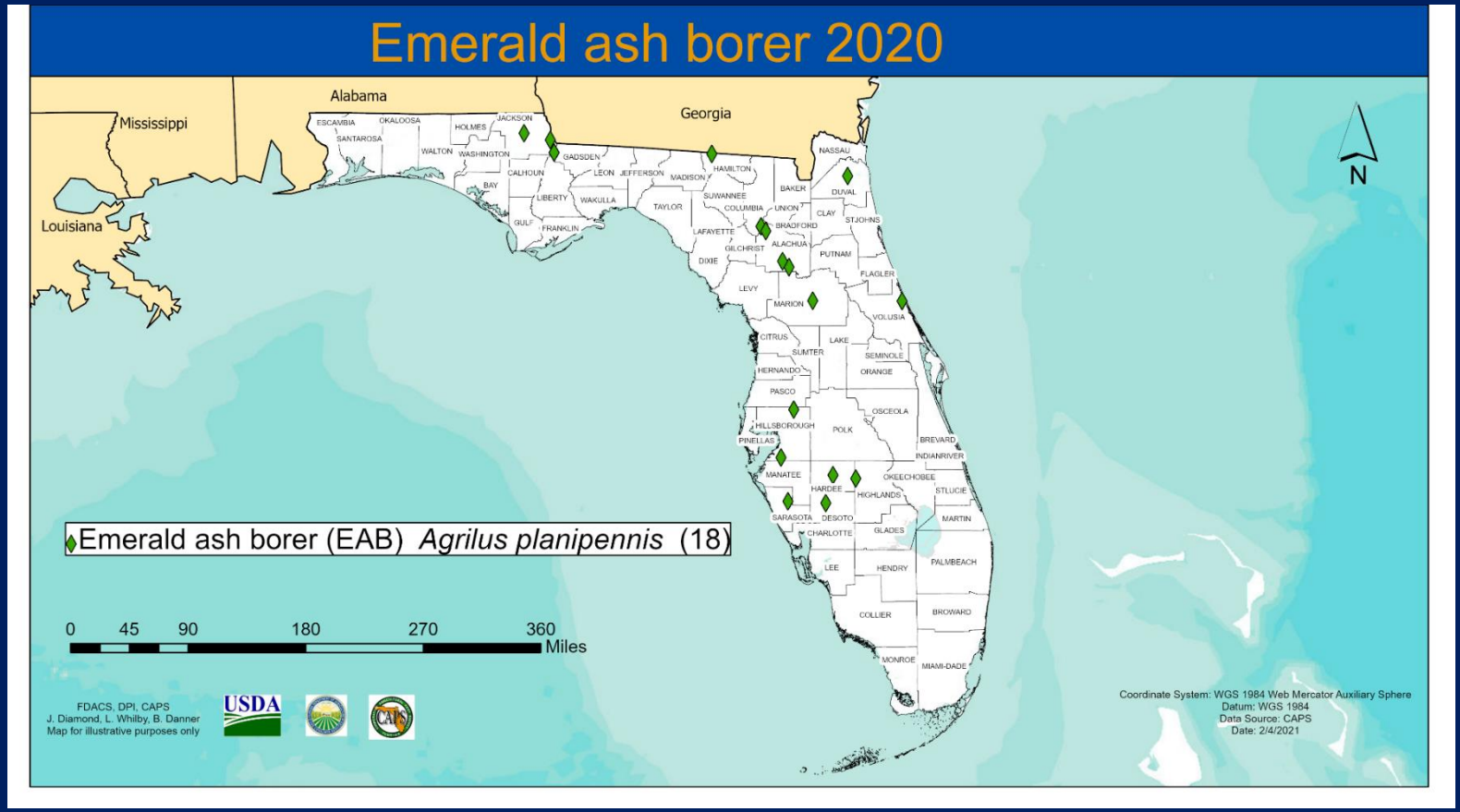
EAB


Emerald ash borer 2020
Alabama
Georgia
Mississippi
Louisiana
ESCAMBIA
OKALOOSA
SANTAROSA
HOLMES
JACKSON
WALTON
WASHINGTON
GADSDEN
BAY
CALHOUN
LEON
JEFFERSON
MADISON
HAMILTON
NASSAU
BAKER
DUVAL
LIBERTY
WAKULLA
TAYLOR
SUWANNEE
COLUMBIA
UNION
CLAY
STJOHNS
GULF
FRANKLIN
LAFAYETTE
BRADFORD
ALACHUA
GILCHRIST
PUTNAM
DIXIE
FLAGLER
LEVY
MARION
VOLUSIA
CITRUS
LAKE
SUMTER
SEMINOLE
HERNANDO
ORANGE
PASCO
OSCEOLA
HILLSBOROUGH
POLK
BREVARD
PINELLAS
INDIANRIVER
MANATEE
OKEECHOBEE
HARDEE
STLUCIE
HIGHLANDS
SARASOTA
DESOTO
MARTIN
CHARLOTTE
GLADES
LEE
HENDRY
PALMBEACH
COLLIER
BROWARD
MONROE
MIAMI-DADE
N
Emerald ash borer (EAB) Agrilus planipennis (18)
0 45 90 180 270 360
Miles
FDACS, DPI, CAPS
J. Diamond, L. Whilby, B. Danner
Map for illustrative purposes only
USDA
Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Datum: WGS 1984
Data Source: CAPS
Date: 2/4/2021

EAB: 2020 Results

No pests from the CAPS EAB target list have been detected; however:

- 18 GLF traps
- 62 samples were processed

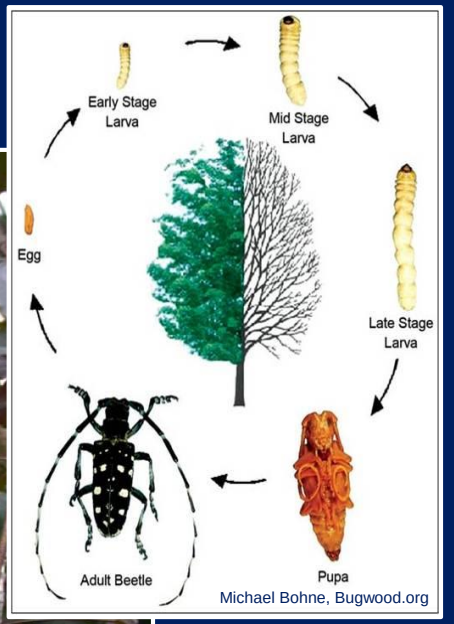


Visual survey: Asian Longhorned Beetle (ALB)

Anoplophora glabripennis

ALB

- First U.S. detection in New York in 1996; most recently found in South Carolina (2020)
- Native to China and Korea; probably introduced via wood packing materials made from poplar.
- Maples, birches and elms are susceptible to attack by ALB.
- Populations may go unnoticed for years before detection.



Red maple infested with ALB

Visual survey: Citrus Longhorned Beetle (CLB)

Anoplophora chinensis

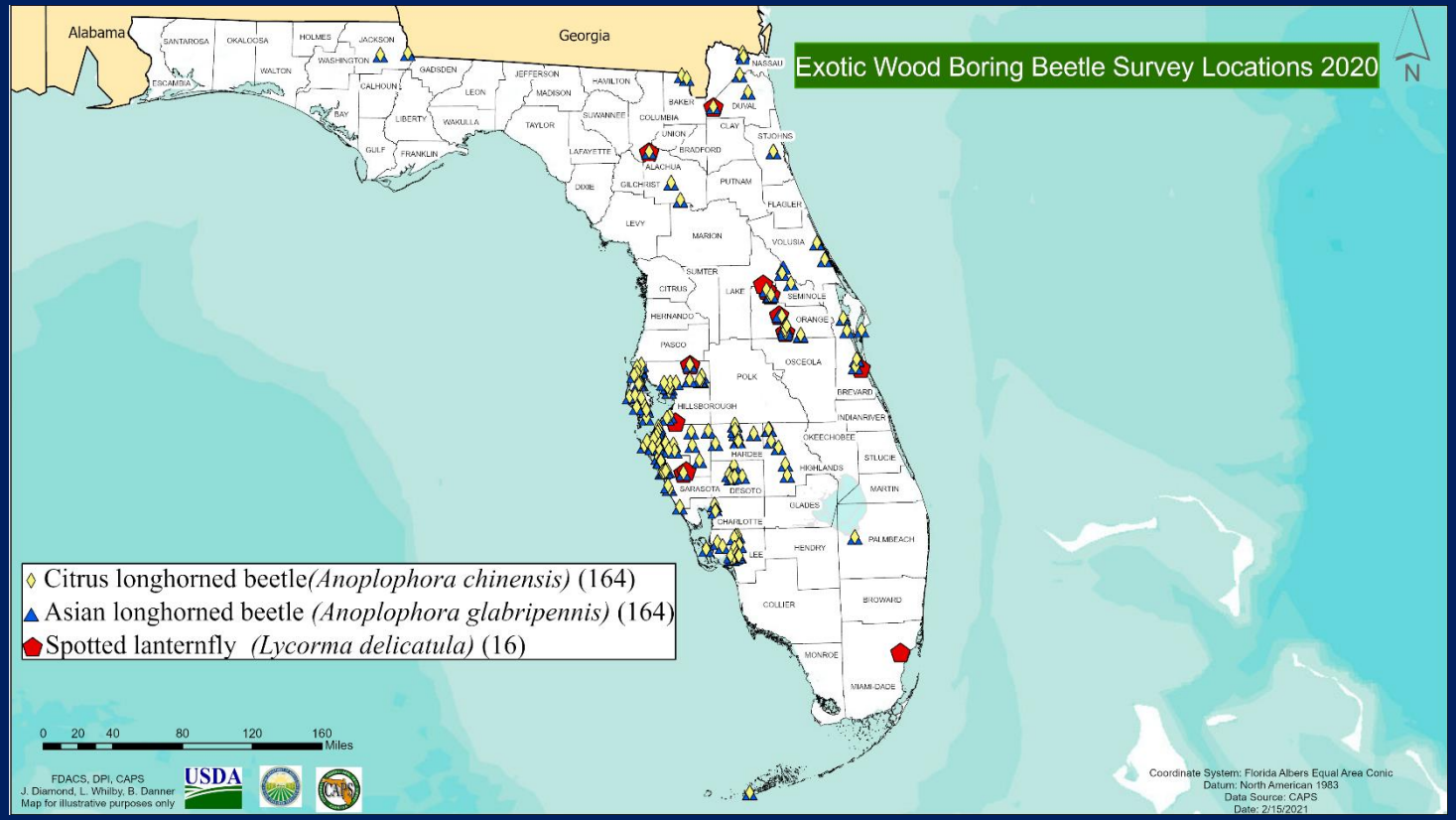
CLB

- CLB is native to Asia (Japan, Korea and China).
- In 1999, intercepted on crape myrtle bonsai shipped from China to Athens (GA) nursery.
- Last interception in California (2018) from an airport. Origin: Hong Kong.

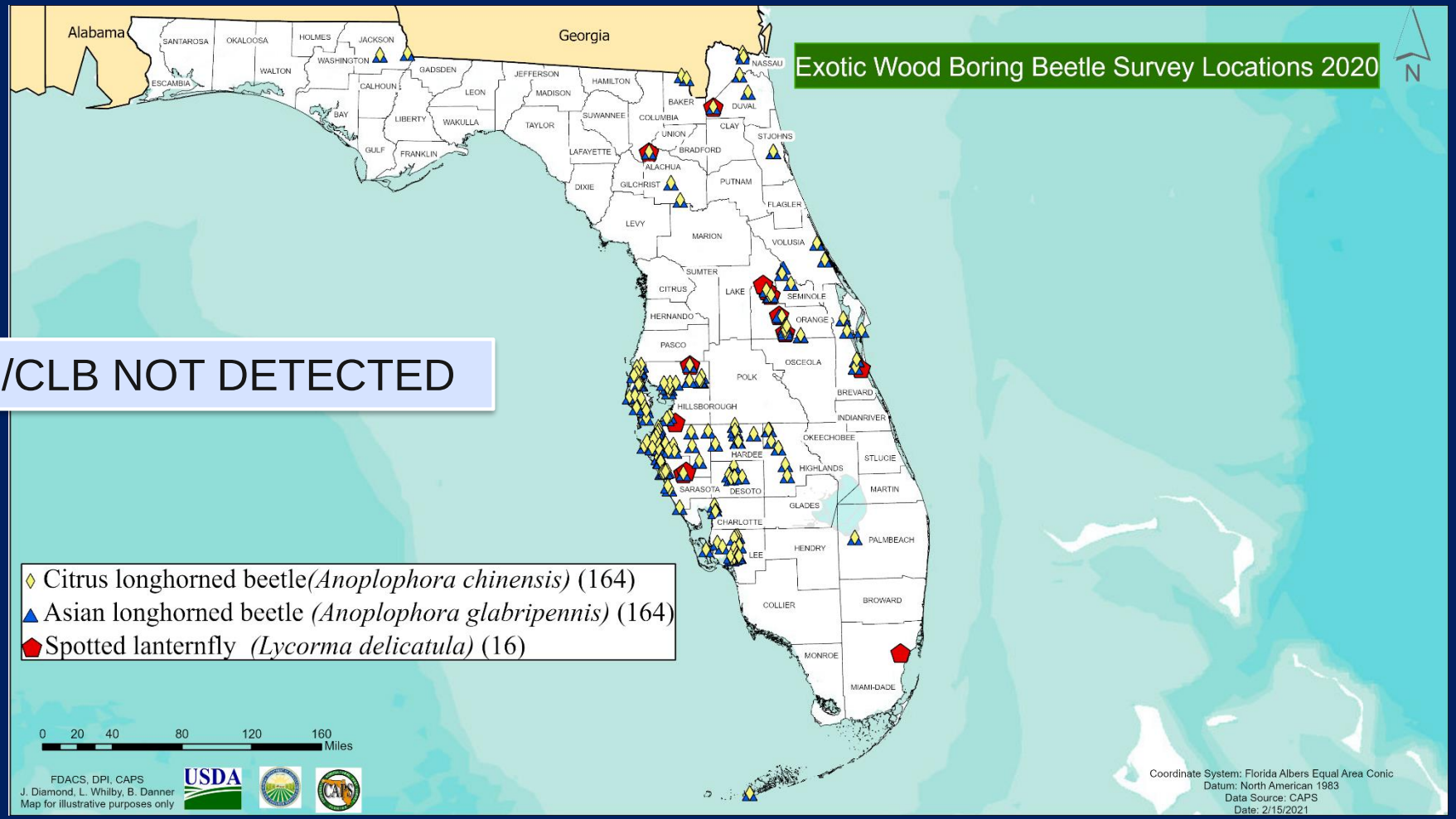
- Hosts:
  - Citrus, poplars, Australian pine, willows, apple, etc.

ALB/CLB

- Counties:
  - Alachua, Baker, Brevard, Charlotte, DeSoto, Duval, Gadsden, Hardee, Highlands, Hillsborough, Jackson, Lee, Manatee, Monroe, Nassau, Orange, Palm Beach, Pinellas, Sarasota, Seminole, St. Johns, Volusia
- Hosts:
  - *Acer* spp., *Acer rubrum* (Red maple), *Ulmus americana* (American elm), *Ulmus parvifolia* (Chinese elm), and *Salix* sp. (Willow)



ALB/CLB 2020 Results



EWBB: 2021 Plans

Pest list 2021:

Retaining:

- *Agrilus planipennis*
- *Hylobius abietis*
- *Platypus quercivorus*
- *Tomicus destruens*
- Visual: *Anoplophora glabripennis*
- Visual: *Lycorma delicatula*

Removing:

- *Monochamus alternatus*
- *Monochamus urussovii*
- Visual: *Anoplophora chinensis*

Adding:

- *Ips sexdentatus*
- *Ips typographus*
- *Thaumetopoea pityocampa*

©2008 Dr. Amadej Trnkoczy

Photo by Pest and Diseases Image Library, Bugwood.org

Photo by: Gyorgy Csoka, Hungary FRI, Bugwood.org

Ips typographus
European spruce bark beetle

Ips sexdentatus
Six-spined engraver beetle

Orthotomicus erosus
Mediterranean pine engraver beetle

Tomicus minor
Lesser pine shoot beetle

Early Detection and Rapid Response (EDRR)

What is EDRR?

Early Detection and Rapid Response is a cooperative program between the Florida Forest Service, U.S. Forest Service, university, and state representatives.

Goals:

- Detect, delimit and monitor newly introduced exotic bark and ambrosia beetles at selected high-risk forest areas.
- Quickly assess and respond to newly detected infestations.

EDRR

- 12 wooded sites near high risk areas, each with 3 traps
- March – July

- 36 Lindgren funnel traps in 10 counties (Brevard, Broward, Columbia, Duval, Escambia, Marion, Miami-Dade, Palm Beach, Santa Rosa, Suwannee)
- Lures
  - Ethanol
  - Ethanol and Alpha-pinene
  - Ips Lure
- Checked every 2 weeks, 6 collections total

EDRR: 2020 Results

- 228 samples submitted
- 4,709 scolytines identified by Dr. Anthony Cognato of Michigan State University

Thank You!